

example] by triggering an explosive [bolt,] means so that [the] said member is released into impact or energy transfer with the geological specimen thereby transmitting a seismic wave to the geological specimen, said apparatus being characterized in that the elastic energy accumulator member has a number of interconnected sections of different diameters.

{Amend claim 2 as follows:}

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Concise

2. (Amended) Apparatus as claimed in Claim 1 in which the elastic energy accumulator member has a number of co-axial cylindrical sections of different diameters of which [the] a section at the end of the member remote from the actuator means constitutes an impactor [which, in use, is] adapted to be held adjacent [the] a geological specimen under test so as to impact the specimen on release of the member.

{Amend claim 3 as follows:}

3. (Amended) Apparatus as claimed in Claim 2 [having] wherein said accumulator member has a section nearest the actuator means which is the smallest in diameter of the sections.

Amend claim 5 as follows:

5. (Amended) Apparatus as claimed in Claim 3 in which said smallest diameter section adjoins a [large] larger diameter section which is connected to two further sections stepped down in diameter and connected in turn to a smaller diameter section which is larger in diameter than said smallest diameter section adjacent the actuator means.

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{Amend claim 6 as follows:}

6. (Amended) Apparatus as claimed in Claim 5 in which said smaller diameter section is connected to two larger diameter sections which are stepped up in diameter, the [last]

larger diameter section of these sections [constituting the] defining an impactor [to be] located adjacent [to] the geological specimen [in use] under test.

{ Amend claim 7 as follows: }

7. (Amended) Apparatus as claimed in Claim 6 in which [the] said accumulator member is supported to resist movement in a direction away from [the] a geological specimen under test[,] by said last-mentioned section.

{ Amend claim 8 as follows: }

8. (Amended) Apparatus as claimed in Claim 7 in which a blocking system or fixed support is provided at the rear of said last-mentioned section [surrounding the penultimate] and surrounds the smaller diameter section of said two larger diameter stepped sections [, thereby resisting or preventing] so as to resist or prevent movement of the accumulator member in said direction away from said specimen on the application of the preload force.

Amend claim 11 as follows:

11. (Amended) Apparatus as claimed in Claim 1 having transducers arranged to measure[, in use, the] a mechanical [behaviour] behavior across [the] a section of [the] a geological specimen through which a seismic wave is being transmitted.

Amend claim 13 as follows:

13. (Amended) Apparatus as claimed in Claim 1 [in which] including seismic sensors [are included] extending at an angle or transversely of the direction of propagation of the wave.

Amend claim 14 as follows:

14. (Amended) Apparatus as claimed in Claim 1 including a thin metallic or conductive sheet [to be] fixed to [the] a surface of the geological specimen [(for example by

cement)) and connected to measuring instrumentation [such as a Wheatstone bridge, for example,] in order to obtain superficial strain measurement.

{ Amend claim 15 as follows: }

15. (Amended) Apparatus as claimed in Claim 1 in which the measuring instrumentation includes accelerometers.

{ Amend claim 16 as follows: }

16. (Amended) A method of inducing or generating a simulated seismic wave in a test specimen, [for example a geological specimen,] said method including the steps of; providing an elastic energy accumulator comprising a member [which is] arranged to act on the specimen so as to deliver a seismic wave to the specimen, supporting the elastic energy accumulator to resist movement in a direction away from the specimen, [and] preloading the elastic energy accumulator in said direction, suddenly quelling the preload force[, for example by triggering an explosive bolt in] by means of the elastic energy accumulator[, thereby releasing] so as to release the elastic energy accumulator into impact or energy transfer with said specimen [thereby transmitting] and transmit a simulated seismic wave to the specimen, collecting data from the specimen and analyzing said data, characterized in that the energy accumulator member is [so] shaped [by providing it with] to define a number of interconnected sections of different diameters [that it delivers] operative to deliver a seismic wave of known amplitude and duration.

REMARKS

It is noted that claims 1-16 are pending in the application, that claims 1-16 stand rejected under 35 U.S.C. § 112 on the grounds set forth on page 2 of the Action, that claims 1-7 and 16 stand rejected under 35 U.S.C. §102(b) on the cited Dransfield et al. reference, and that claims 9-10 stand rejected under 35 U.S.C. § 103(a) on the Dransfield et al. reference.